

SCRUPITY COMMENTS ON MINING PLAN OF M/S TUMKUR MINERALS, JANA HAR IRON & MANGANESE APPLIED MINING LEASE AREA OF IRON AND MANGANESE ORE, OVER AN AREA 259 HA.(178.00 HA IN FOREST AREA, 81.00HA IN NON –FOREST AREA, IN JANA HAR VILLAGE, C.N. HALLI TALUK, TUMKUR DISTRICT OF KARNATAKA STATE. SUBMITTED UNDER RULE 16(1) OF MCR, 2016. PERIOD OF PROPOSALS IS FROM THE DATE OF EXECUTION FOR FIVE YEARS.CATEGORY OF THE APPLIED AREA FALLS IN A(FM-FULLY MECHANIZED).

NOTE

1. As per the CCOM Circular no. 03/2010 dated 14.07.2010 , threshold value of Hematitic iron ore is 45% Fe(both lumpy and powdery), but for this deposit average grade of iron ore , as evident from exploration by core borehole drilling, is only 36% Fe, which can not considered as 'Iron Ore' as of now.
2. During site inspection dated 22.12.2016, extensive outcrops of BHQ, Mn and iron ore float was seen within the applied area but adequate exploration is not found to be carried out in the deposit by the applicant. Therefore, extent and quality of mineralization is not established yet. Only South Eastern portion of applied lease area is found to be explored by 5 nos. of core boreholes and average grid spacing of boreholes are found to be more than 180m (less than 200m), for borehole nos. BH1, BH 2, BH 4 and BH 5. Hence, it is to be concluded that, only SE part of the deposit is explored by G2 stage of exploration; not by G1 stage as incorrectly claimed by the applicant in the document. Influence of isolate drilled borehole no. BH3 is not acceptable for reserve estimation.
3. No resource estimation method is deliberated for manganese ore. No discussion is found in the document on Bulk Density and Recovery% for iron and manganese ore and justifications for considering the same.
4. Statement on the end-use of iron ore ROM is ambiguous. Applicant is proposing to establish a captive sponge iron plant to consume entire low- grade iron ore (average 36% Fe). Contradicting former statement, applicant is proposing again to supply 'Calibrated Lumpy Ore' with 55-67% Fe for steel making purpose. Location of availability of such high grade of iron ore in the applied ML area is not established.
5. Chemical Analysis report is furnished only for borehole nos. BH4 and BH5. No analysis report is available for other 3 nos. of drilled boreholes. Copy of borehole logs are also not found to be enclosed.
6. In analysis reports of borehole nos. BH4 and BH5, Client's name is mentioned as 'Dr. M.P Shrivastava'. The applicant is required to give an affidavit that those samples are actually drawn and submitted by "M/s Tumkur Minerals". Locations of drawn sample no. 1 to sample no. 22 (enclosed as annexure) are not found demarcated in the geological Plan.

COVER PAGE

7. Proposed method mining operation should be mentioned clearly as: Open-cast, Category A, Fully mechanized, or A (Mechanized), type of mine should be written as proposed for 'Captive mine'.
8. Address of applicant may be removed from the cover page.

GENERAL

9. Para 1.0(b): Name of the applicant should be 'nominated owner' of the company, instead of power of attorney. Accordingly the text should be incorporated suitably.

10. Para 1.0 (f): As per Rule 15(1) of MCR, 2016 a qualified person should have a degree in mining engineering or a post graduate degree in Geology with professional experience of minimum five years of working in a supervisory capacity in the field of mining after obtaining the degree. Accordingly copies of relevant educational qualification and professional experience certificates may be enclosed.

LOCATION AND ACCESSIBILITY

11. Para 2.0(d): Name and type of the forest land involved in the applied area should be mentioned.
12. Copy of the Khasara Plan, showing co-ordinates of applied ML area, issued by the State Govt. to the applicant may be enclosed with the document.

PART-A

13. Para 1.0(c): Occurrence of iron ore minerals in the deposit should be mentioned in the local geology. During the course of exploration by core drilling, name/s of iron ore mineral/s encountered should be furnished specifically since the deposit consist both Hematite and Magnetite mineral. Average silica content in iron ore may be mentioned.
14. Para 1.0 (e): In South-Eastern portion of the applied area one old pit/ trench measuring approx. 140m (length) and 20 m (Width) is seen during the course of inspection, but no discussion is made on the same. Copy of core borehole logs are not found enclosed with the document. No chemical analysis is found for manganese ore in core borehole drilling analysis reports for BH4 and BH5.
15. Para 1.0(g): Locations of spot sampling are not found demarcated in the geological plan, but copy of analysis reports are enclosed (sample no. 1 to sample no. 22).
16. Para 1.0(h): Selection of section lines for reserve and resources estimation is found in-correct. Prominent strike direction of the deposit as evident from BHQ band is NNE-SSW, section lines should be drawn perpendicular of strike direction. For this deposit, due to inadequate exploration, only two section lines can be drawn at this stage. First section lines may be drawn along BH2 and BH5; another section line may be drawn along BH1 and BH4. Influence of isolate drilled borehole no. BH3 is not acceptable for reserve estimation.
17. Para 1.0(i): As per the Ministry of Mines guidelines/letter no: F.No.10/75/ 2008 MV, dated 23/12/2010, entire mineralized area should be drilled under detailed (G1 stage) exploitation within 05 years after the execution of lease. In view of above, proposed exploration programme may be corrected.
18. Para 1.0(j): Since, applied area is not explored under G1 stage of exploration so far, area covered under G2 and G3 stages of exploration may be corrected in page no. 18. As of now, 3 types of UNFC codes are prevailing for this deposit, viz. probable mineral reserve (UNFC code 122), blocked ore resources due to village road (UNFC code 222) and inferred mineral resources (UNFC code 333). Accordingly, justifications for UNFC codes may be corrected. Reserve and resource estimation is not furnished for manganese ore, the reasons for the same may be clarify. In economic evaluation of feasibility report, provisions of paying royalty on dispatched ROM to the State Govt., paying royalty% against District Mineral Foundation (DMF) and National Mineral

- Exploration Trust (NEMT) are not considered. Approx. capital investment for captive sponge iron plant, potential buyers and tentative payback period are also not discussed in the feasibility report.
19. Para 1.0(k): In view of scrutiny comment as mentioned earlier for para 1.0(h), estimation of section-wise reserve/ resources of the deposit should be corrected. Basis of Reserve/ resources estimation viz. Bulk density and Recovery% for iron and manganese ore should be mentioned clearly. Date of estimation of reserve should be mentioned. The quantity of reserves/ resources for both Iron & manganese ore projected on assumption basis is not appropriate and correct. Hence, exploratory mining/ drilling should be adopted after obtaining the mining leases, before commencing the production, the mining plan may be modified by reassessing the reserves/ resources.
 20. Para 1.0(l): Quality of iron ore and manganese ore should be mentioned in table A1.9. Proposed mining loss and processing loss may be mentioned.
 21. Para 2.A (a): Table-A2.1, given with dimension of old pit exist, but clear about whether this for Mn or for Iron, even though it is mentioned the area was surveyed. If it is surveyed, these things should be very specific. In addition to the brief note, the slope of faces, direction of advancement, approach to the faces & specification of roads, etc to be marked. Also, the existing dumps spread parameters, height, slope protective works etc., to be marked. The bench wise, mRL wise, opening reserves, exploitation and the closing balance should be furnished for the proposed periods.
 22. The proposed production should be arrived by dividing total minable reserves by Mining Lease period i.e 50 years.
 23. Para 2.0 (b): Tentative ROM excavation during first five years for manganese ore is found to be exceeded than the total reserve, may be corrected accordingly.
 24. Para 2(e), under the development & production programme for the 1st year it is given, level 830 to 820mRL development of soil is given, which is not correct, as the area was inspected jointly, but no such top soil could be present, to make the proposals. Hence, the proposals may be reconciled. In the light of the above remarks, the plates and the text may be attended.
 25. Para 3.0 (c): Protective measure for maintaining discharge mine water quality should be furnished.
 26. Para 4.0(c): Sequence of year wise build up of temporary waste dump and environment protective measures to arrest the escape materials from the dump should be furnished in a tabular format. Location of top soil stacking area may be demarcated separately in the Production and Development plan.
 27. Para 5.0(a): Applicant propose to establish a captive sponge iron ore plant near the mine site to consume entire low grade iron ore of the applied area (average 36% Fe). Typical physical and chemical requirements of ROM should be mentioned for the captive plant. It is to be clarified whether any low grade iron ore beneficiation study carried out by the applicant in this regard? If so, details of the study may be furnished in this chapter. End use of manganese ore is not furnished in this chapter. Applicant is proposing again to supply 'Calibrated Lumpy Ore' with 55-67% Fe for steel making purpose. Location of availability of such high grade of iron ore in the applied ML area is not established so far, if it is so, how the proposals drawn to supply calibrated lumpy ore may explain.
 28. Para 6.0 (a): the information furnished in this para is not clear for understanding.
 29. Para 8.1: In page 44, name, distance and population of the villages present in the buffer zone may be furnished in a tabular format.
 30. Para 8.2: Mitigate measures to control air quality, water and noise pollution may be furnished here.

31. Para 8.4: Name, designation & contact no. of the person to be communicated in case of any emergency situation should be furnished in this para.
32. Para 8.6: In Financial Assurance table, 'area under mining' at the start of the mining plan is written as 0.36 Ha, which is not correct and appropriate. The same should be deleted.

PART-B

33. Para 9: An additional undertaking from Qualified Persons may be enclosed stating "all plans and sections have been prepared based on the precise area map authenticated by the State Government of Karnataka"
34. **Para 10, Plates:** Key plan, Surface plan, Geological Plan and Environment Plan should be prepared as per the provisions stipulated in Rule 28 of MCDR, 1988.
 - a) Precise area map as provided by the State Govt. should be provided as first plate.
 - b) Key Plan (Plate no. 1A): Villages name, contours and other features are not legible; nearby ML areas are required to be demarcated in this plan.
 - c) Surface Plan (Plate no. 3): Co-ordinate of grid-lines in this plate should be mentioned either in 'WGS-84' or in 'Indo-Bangla', furnishing local grid line is not acceptable. All existing surface features like agricultural lands, village boundaries, existing forest/ non-forest land etc. are not demarcated in the plan. Three nos. of ground control points connecting to one of the boundary pillars are not established. Old pit is drawn without showing, whether it is for iron ore or for manganese. The approximate size of the pit also not indicated. The plate prepared and submitted reveals as if the area is not surveyed. It is therefore, advised to resurvey the area and furnish all the datas/ features, which ought to have been as per based on the rule 28(1)(a) of MCDR,1988.
 - d) Geological Plan & Sections (Plate no. 4): Demarcation of 'area covered under G2 stage of exploration' should be corrected in the plan. In view of scrutiny comment as mentioned for para 1.0(h), section lines may be re-drawn. Locations of spot samplings are not demarcated in the plan. Section-wise reserve / resources estimation should be carried out as per the demarcated UNFC codes. ***The bore holes shown as existing the applied area is not seen in the field. If it is so, how the calculation of reserves made, for iron & Manganese may be explained. The sections drawn for X-X' and Y-Y' shown the presence of iron ore at depth and slightly exposed on X' side, but during the field visit, it was observed for presence of old manganese waste dumps, with few quantity of ore, iron ore deposition could not be seen / observed, except floats of iron ore at places in the slopes.*** This plan should be prepared based on the rule 28(1) (b) of MCDR, 1988.
 - e) Proposed working Plan & Sections (Plate no. 5(A): Invariably it is expected that the individual plates, must be mentioned as 1st year, 2nd year and up to 5th year, but in this submission, nothing is mentioned. End of each working should be shown in each working. Approach way to the manganese benches is not drawn. In the light of the above observations, the remaining years proposed workings should be attended.
 - f) Environment Plan (Plate no.6): Name of the plate may be corrected. Proposed environment monitoring stations are to be marked in core and buffer zone. Various types of proposed environment protective measures viz. afforestation, retaining wall, check dams, gully plugs and other measures required in this terrain are not shown at appropriate places.

g) Conceptual Plan & sections (Plate No.7): The plan and sections are not prepared appropriately. With the existing topography, at the conceptual stage, showing water storage in the slope area is not found to be reality.

35. **Para 11, Annexure:** Avoid any type of stamping in the annexure, following items are required to be annexed with the document:

- a) Copy of the certificate of incorporation of "M/s Tumkur Minerals" as a company.
- b) Copy of educational qualification & work experience certificates of Qualified Persons.
- c) Copy of complete borehole logs.
- d) Corrected detailed section-wise calculation of reserve and resources of the deposit (for iron and manganese).
- e) Copy of the analysis reports of BHQ and BMQ from NABL/ similar accredited laboratory.
- f) Corrected Feasibility Study Report.
- g) Copy of the beneficiation study report of low grade iron ore, if any.
- h) Few photographs of applied lease area.